

621.80

Establishment Period

Lump

Sum

## SECTION 622 - TRANSPLANTING SHRUBS, HEDGES, AND TREES

622.01 Description This work shall consist of digging, moving and replanting existing shrubs, hedges, and trees in accordance with these specifications and in conformity with the plans or as directed.

622.02 Loam Loam shall conform to the requirements of Section 615.02. Fertilizer shall meet the requirements specified in Section 717.01.

### 622.03 Shrubs and Hedges

a. Digging The earth of shrubs and hedges to be moved shall be carefully encompassing the roots as is customary in good nursery practice. Minimum size of the rootball shall be as indicated in the current edition of the "American Standard for Nursery Stock" sponsored by the AAN.

b. Moving The earth rootball shall be maintained as a solid unit during the moving of the shrubs and hedges and must be protected from breaking or cracking by careful handling. The rootball shall be tightly wrapped with burlap or similar material. Earth rootballs greater than 450 mm [18 in] in diameter shall be tightly bound with cord or rope placed over the burlap unless the shrubs or hedges are to be replanted immediately after digging.

c. Planting The plants shall be planted in the designated new location at the same depth below ground surface as before they were moved. Loam shall be placed to a thickness of not less than 200 mm [8 in] under and around the rootball to eliminate all air pockets and to support the plant. Insofar as feasible, when hedges are to be transplanted, the individual plants shall be replanted in the same relationship to each other that existed before they were moved.

Fertilizer shall be mixed evenly into the backfill soil at the rate of 0.4 kg/m [ $\frac{1}{4}$  lb/ft] of height for each plant. Water soluble fertilizer and slow release fertilizer packets shall be applied at the following rates.

Shrubs to 600 mm [2 ft] high or spread

4 L[4 qt] water soluble or 1

packet

Shrubs to 1200 mm [4 ft] high or spread

6 L[6 qt] water soluble or 2 packets

Shrubs to 1800 mm [6 ft] high or spread

8 L[8 qt] water soluble or 3 packets

d. Time of Transplanting Plants shall be dug and transplanted only when dormant, preferably in the early spring, unless otherwise directed by the Resident. When dug, shrubs and hedges shall be moved directly to the final planting site and planted immediately, if possible. The rootball must be kept moist at all times during transplanting operations. If construction makes it impossible to replant the plants immediately after digging, the rootballs of the plants shall be kept completely covered with a thick layer of earth, hay, peat moss, or similar material which shall be kept moist at all times while the plants remain unplanted. Shrubs may be held in approved pots under conditions of delayed replanting.

e. Pruning All pruning shall be done in accordance with the best horticultural practice. Dead, diseased, or injured shoots and branches shall be removed. In order to restore a normal balance between top and roots, deciduous shrubs shall be thinned by removing uniformly scattered, selected branches which shall be cut back to the main stem, as directed. The Resident may also require tip pruning. Tip pruning may also be required for evergreens. In the case of hedges, the Resident may require shearing to uniform, even surfaces.

f. Watering As soon as the plants are planted they shall be thoroughly watered to the point where the roots and the surrounding earth are well saturated. The first application of liquid fertilizer shall be made during planting.

g. Mulch After removing all weeds and grass, the ground surface over the entire area of the planting pit shall be covered to a depth of 100 mm [4 in] with a mulch of bark, stone or other approved material. Sawdust, hay, or straw will not be accepted as mulching material.

## 622.04 Trees

a. Digging All trees to be moved and replanted shall be dug with a solid ball of earth around the roots as is customary in good nursery practice. The diameter of the ball

shall be not less than 10 times the diameter of the trunk of the tree measured 300 mm [1 ft] above the surface of the ground. Depth of the ball shall be not less than 60% of its diameter for balls up to 1200 mm [48 in] diameter. For balls over 1200 mm [48 in] diameter the ball shall have sufficient depth to maintain a solid structure and to encompass all the feeding roots under the ball area. Power shovels and similar machinery may not be used in digging the ball except with written permission.

b. Moving The ball must be maintained as a solid unit during the moving of the tree. The ball must be protected from breaking or cracking by careful handling and by being tightly bound with cord or rope over canvas, burlap, or similar wrapping. The ball shall be firmly attached to a tree platform of suitable size during moving operation, as required.

c. Planting The trees shall be planted in the designated new location at the same depth in relation to the ground surface as before they were moved. Loam shall be placed to a distance of not less than 300 mm [12 in] under the ball and around the periphery of the ball. Loam shall be puddled and firmed in place to eliminate all air pockets and give adequate support to the ball. Fertilizer shall be applied as specified in Section 621.0025 b.

d. Protection Every care shall be taken to prevent injury to the tree during the transplanting operation. All parts of the tree shall be carefully protected. Branches shall be tied out of the way of possible injury. No chain, cable, or heavy rope may be attached to the trunk or branches without protective padding adequate to prevent bruising or other injury.

e. Time of Transplanting Trees shall be dug and transplanted only when dormant, preferably in the early spring, unless otherwise directed. When dug, trees shall be moved directly to the final planting site and planted immediately if possible. The ball must be kept moist at all times during transplanting operations. If construction problems make it impossible to replant the tree immediately after digging, the ball of the tree must be completely covered with a thick layer of earth, bark mulch, peat moss or similar material which shall be kept moist at all times while the tree remains unplanted. Pruning, watering, fertilizing, mulching, and supporting shall be as specified in the applicable Sections of Section 621 - Landscaping.

622.05 Maintenance It shall be the Contractor's responsibility to protect and care for

the plants during the life of the contract. They shall be watered weekly during dry weather or as otherwise directed. The Contractor shall take steps required to protect the plants from damage and from diseases and insect pests. Should damage occur it shall be repaired by the Contractor, according to the best horticultural practice.

622.06 Replacement If the ball is badly broken or the plants are otherwise badly damaged or if, in the opinion of the Resident, during the life of the contract the plants show such signs of loss of health or appear to be in danger of dying, the Contractor will be required to replace the plants with others of the same size and variety or approved plants of equal value, at the proper season.

622.07 Method of Measurement Transplanting hedges will be measured by the meter [linear foot] in place after transplanting, measured from the extremities of the branches at each end. A hedge shall be defined as an evenly spaced row of plants of uniform size, growing close to each other so that the branches are intermingled.

Transplanting shrubs or trees will be measured in place after transplanting by the single shrub or tree unit.

622.08 Basis of Payment The accepted quantities of transplanting hedges will be paid for at the contract unit price per meter [linear foot] of hedges properly transplanted and accepted, which price and payment shall include digging, binding, moving, replanting, pruning, mulching, care and maintenance and if required, replacement of the hedges and for all loam, mulch and all other materials and incidentals necessary to complete the item.

The accepted quantities of transplanting shrubs or trees will be paid for at the contract unit price for each plant properly transplanted and accepted, which payment shall include digging, binding, moving, replanting, pruning, mulching, care and maintenance and if required, replacement of the shrubs, and for all loam, mulch and other materials, and for all incidentals necessary to complete the item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
622.09 Transplanting Hedge	meter [Linear Foot]
622.10 Transplanting Shrub	Each

622.11 Transplanting Tree

Each

## SECTION 623 - MONUMENTS

623.01 Description This work shall consist of furnishing and placing, or removing and resetting right-of-way monuments and survey monuments at locations shown on the plans or otherwise designated.

623.02 Materials Monuments shall be of granite or of reinforced portland cement concrete. When of granite, the stone shall be of a quality conforming to the applicable requirements of Section 712.04. When concrete is called for, portland cement concrete for monuments shall be of Class A and shall meet the requirements of Section 502 - Structural Concrete. Reinforcement shall conform to the requirements of Section 503 - Reinforcing Steel.

623.03 General Monuments shall be placed in vertical positions in excavated holes at depths shown on the plans or designated, with two sides approximately parallel with the roadway. The backfill material shall be placed in layers not exceeding 200 mm [8 in] in depth, loose measure and firmly tamped.

When removing and resetting monuments, special care shall be taken that the stone shall not be broken or damaged. Monuments broken or damaged by the Contractor shall be replaced with monuments of similar type without added compensation.

When a monument is to be set and it is found that rock exists below ground, it will be permissible to cut off the monument at an authorized length to allow setting on the rock. A concrete collar with dowels shall be placed around the monument to secure it to the rock, as shown on the plans. If the rock is rough enough to provide firm attachment for the concrete, collar dowels will not be necessary. The concrete shall meet the requirements of Section 502 - Structural Concrete. The class of concrete shall be optional.

When a monument is to be set in the surface of exposed rock it may consist of a bronze pin marker embedded in the ledge as shown on the Standard Detail Sheets.

623.04 Method of Measurement Monuments and markers, both new and reset, will